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EXAMINER

MENON, KRISHNAN S

ART UNIT	PAPER NUMBER
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1723

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,099

Applicant(s)

MARTIN, DIDIER J.

Examiner

Krishnan S Menon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other

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DETAILED ACTION

Claims 1-10 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mir et al (US 4,353,715) in view of Masson (US 6,010,833).

Mir (715) teaches a method of recycling wash water from paint booths containing carbon particles (abstract; col 1 lines 35-59, col 2 lines 1-8, col 3 lines 27-33), passing the water through cellulose acetate (hydrophilic) ultrafiltration membrane (col 2 lines 9-23), wherein a permeate having wash water free of carbon particles and other solutes is obtained as in instant claim(s) 1. Re the hydrophilic membrane having electrically charged surface, Mir has cellulose acetate membrane. Applicant discloses that the cellulose acetate membrane, among others, is hydrophilic with surface

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electric charges in page 3, lines 10-20. Cellulose acetate has carboxylate groups (acetate), hence should have charges as disclosed by the applicant.

Claim 1 recites method of recycling wash-water from treatment of a film, which Mir does not teach. Masson teaches a membrane process for recycling wash-water from photographic films (see abstract; col 1 lines 38-55). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Masson in the teaching of Mir to recycle wash-water from photographic films containing carbon particles using a membrane as taught by Mir to remove the carbon particles and recycle the water.

The water is recycled as in instant claim(s) 2 (col 2 lines 61-65); cellulose acetate polymer membrane as in instant claim(s) 5 (col 2 lines 8-21); tangential filtration as in instant claim(s) 6 (see 30-fig 1) and removes dyes as in instant claim(s) 7 (col 3 lines 5-23).

Re claims 3 and 4, the wet contact angle is a property of the membrane. Claims recite materials similar to what is used in the reference. Where applicant claims a composition in terms of a function, property or characteristic and the composition of the prior art is the same as that of the claim but the function or characteristic is not explicitly disclosed by the reference, the examiner may make a rejection under both 35 U.S.C. 102 and 103, expressed as a 102/103 rejection. "There is nothing inconsistent in concurrent rejections for obviousness under 35 U.S.C. 103 and for anticipation under 35 U.S.C. 102." In re Best, 562 F.2d 1252, 1255 n.4, 195 USPQ 430, 433 n.4 (CCPA 1977). This same rationale should also apply to product, apparatus, and process claims claimed in terms of function, property or characteristic. Therefore, a 35 U.S.C. 102/103 rejection is appropriate for these types of claims as well as for composition claims.

Re claim 8, Mir does not teach the molecular weight cut-off of the ultrafiltration membrane used. Masson defines ultrafiltration membrane as membrane having molecular weight cut-off of

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over 2000 (col 1 lines 38-55). It would be obvious to one of ordinary skill in the art at the time of invention to select the membrane of appropriate molecular weight cut-off as taught by Masson for filtering the carbon particles in the teaching of Mir, since Mir does not specify the molecular weight cut-off required.

2. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mir et al (US 4,353,715) in view of Masson (833) as applied to claim 1 above, and further in view of Yamada et al (US 6,277,209 B1).

Mir in view of Masson does not teach cleaning the membrane using hydrochloric acid. Yamada teaches cleaning the membrane with hydrochloric acid (col 2 lines 46-54). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Yamada to in the process of Mir in view of Masson to clean the calcium scale deposits on the membrane.

3. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mir et al (US 4,353,715) in view of Masson as applied to claim 1 above, and further in view of Hilgren (US 4,692,251) and Olsen (US 6,315,130 B1).

Mir in view of Masson does not teach use of a prefilter. Hilgren (251) teaches using a prefilter in ultrafiltration of fluids containing carbon particles col 1 lines 30-40, fig 2, col 5 lines 7-17), and Olsen teaches a polypropylene pleated filter for use as a prefilter (abstract). It would be obvious to one of ordinary skill in the art at the time of invention to use a prefilter in the teachings of Mir in view of Masson, as taught by Hilgren to reduce fouling and the load on the membrane (Hilgren col 5 lines 7-17), and would use the prefilter as taught by Olsen for its high efficiency (Olsen abstract).

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Response to Arguments

Applicant's arguments filed 5/30/03 have been fully considered but they are not persuasive.

Applicant's argument that activated carbon particles are intentionally added in Mir ref, whereas carbon is removed as a pollutant in the applicant's process: Claim 1 recites "a method of recycling wash-water from the treatment of a film 'provided with' carbon particles based backing layer.", which appears to the examiner as carbon particles being intentionally added to the film, which is then removed in a down-stream process.

Argument re Mir not providing motivation to use hydrophilic membrane: Mir uses cellulose acetate membrane (which is hydrophilic), or other polymeric membranes. See the rejection.

In response to applicant's argument that Mir ref is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the Mir ref is very much in the field of applicant's endeavor of ultrafiltering carbon particles from wash-water. The claims are open-ended. Any additional material removed from the wash-water, such as oil emulsion, surfactant, or molecular sieves does not make the reference non-analogous, nor does description of other processes like recycling the residual carbon particles or recovering the solvents from the ultrafiltration concentrate.

Argument that acrylate or cellulose acetate membranes are 'known to be not recommended for solvents...': Mir uses the membranes for ultrafiltering wash-water, not for ultrafiltering "solvents". Mir uses cellulose acetate membrane. While solvents could be present in the wash water, one of skill in the art would know that the solvents are in a state of adsorbed onto the

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carbon' and, therefore, concentration of the solvents in the wash-water would be sufficiently low to affect the membrane. Therefore, this argument lacks merit.

Re applicant's argument that Table III gave unexpected results: Table III only shows test results from the 3 different materials (5 different models) for ultrafiltration membranes sold by Rhodia-Orelis (see Rhodia Orelis brochure). This result showed that acrylonitrile membranes performed better than the PES or PVdF membranes for the ultrafiltration of carbon particles from wash-water. However, applicant is not claiming acrylonitrile membrane, but any hydrophilic membrane having electric charge. Applicant admits that cellulose acetate membrane falls in this category of electrically charged membranes in claim 5 and in the specification (page 3 lines 10-20; cellulose acetate has carboxylate groups – acetate). Mir uses cellulose acetate membrane. Therefore, Mir teaches what is claimed in claim 1. To be an anticipatory reference, Mir does not have to specifically teach using electrically charged hydrophilic membrane, but just such a membrane.

Conclusion

This action is made non-final due to the new grounds for rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner
July 15, 2003

Walker
W. L. WALKER
SUPERVISORY PATENT EXAMINER
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